IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND

IN RE MICROSOFT CORPORATION ANTITRUST LITIGATION	
This Document Relates to: *Burst.com, Inc. v. Microsoft Corp.*	MDL Docket No. 1332
Civil Action No. C-02-2930-VRW	

MICROSOFT CORP.'S OPENING CLAIM CONSTRUCTION BRIEF

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I. Introduction

Burst.com ("Burst") accuses Microsoft Corp.'s ("Microsoft") most recent version of its Windows Media technology for audio/video file transfer over the Internet of infringing 80 claims of U.S. Patents 4,963,995 ("the '995 patent"), 5,164,839 ("the '839 patent"), and 5,995,705 ("the '705 patent") (Exhibits A, B, and C respectively). These patents, however, have nothing to with the Internet or general purpose computers and, instead, describe an improved VCR system, called a "VCR-ET." Burst's patents describe using the VCR-ET in various permutations, including the possibility that multiple, specialized VCRs might be connected using fiber optic cables to provide for very fast transfer of an audio/video file from one VCR-ET to another. As claimed, that fast file transfer must occur in less time than the contents of the audio/video file take to play at normal speed – *i.e.*, a "faster than real time" transfer. Burst focuses on that fast file transfer, and ignoring the fact that its patents claim a specific system and method for such a fast file transfer, asserts that it invented all forms of "faster than real time" transfer. Not surprisingly, the parties disagree as to the proper legal scope of the asserted claims, and this *Markman* process presents the parties' disputes as to the meaning of the disputed claim terms.

Although Burst's claims are to be construed without regard to the accused software, the Microsoft software features nonetheless frame the claim construction disputes. Burst accuses two features, Fast Start and Fast Cache, of Windows Media Server 9 of infringing. These features allow in certain circumstances for audio/video files, or parts of those files, to travel over the Internet to a Windows Media Player client in less time than the content of the file would take to play. Burst's infringement allegations rest solely on this sometimes result, in which audio/video files travel "faster than real time."

A predicate step in resolving whether the mere fast transfer of audio/video infringes Burst's patents is the construction of the disputed terms in Burst's claims. The correct construction of Burst's patent claims is an issue of law for the Court to determine. *See Markman v. Westview*

Instruments, Inc., 52 F.3d 967, 971 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370, 116 S. Ct. 1384 (1996). The repetition and significant similarity in the language across the many asserted claims creates several central disputes, the resolution of which will have a broad impact on this case. Many claims, in addition, use specific language to differentiate them from other claims. Resolution of the disputes on these terms, although necessary, will have a narrower impact on the overall case. Microsoft first asks the Court to construe claim terms with broad impact and then to construe terms appearing in fewer claims.

There are three fundamental construction disputes. Two such disputes, the meaning of the terms "time compressed representation" and "associated burst time period," go to whether Burst's patents cover all "faster than real time" audio/video file transmissions. The third, whether Burst's apparatus claims are "means plus function" elements under 35 U.S.C. §112, ¶ 6 ("Section 112, ¶ 6") and what scope these elements have, goes to whether Burst's patents cover modern general purpose computers broadly.

This lawsuit stems from Burst's claim to technical developments well beyond any realistic appraisal of its actual contributions. Although, under Burst's claim construction, its patents would encompass all "faster than real time" network transfer – *i.e.*, audio/video data transmission in less time than the data takes to play, the prior art clearly discloses transmitting multimedia data files faster than their corresponding play time. The Patent Office was aware of this prior art and only allowed Burst's claims because they required specific features in addition to faster than real time audio/video transmission and claimed only a specific apparatus for and method of faster than real time file transfer. Simply put, faster than real time transfer alone cannot be covered by the asserted patents – but if so, they are facially invalid.

Throughout this litigation, Burst has supported its broad construction by telling a story about how it invented faster than real time transmission. Stories of invention, however, are irrelevant. Individuals frequently believe they "invented" something novel, only to learn later that someone else

"got there first." That is why patent Examiners scour the prior art to determine whether an "invention" is truly an invention in the eye of the law and require specific limitations in patent claims so that patent claims do not read on the same prior art the Examiner reviewed.

Resolution of the patent dispute here rests not on Burst's story of invention, but on the proper claim construction. Claim construction is the rigorous process of determining what the terms in Burst's claims mean – what they encompass and what they do not cover. The claim language, its ordinary meaning, the specification, and the file history (including cited prior art) inform this process – without regard to Burst's story of the history of development in this area.

Burst cannot avoid that its patent claims contain many specific elements that limit the scope of its claims. Burst's "apparatus claims" contain very specific means plus function claim limitations and are thus narrow and limited, as required by Section 112, ¶ 6, to the structure the specification describes as performing the claimed functions and its equivalents. Burst's apparatus claims expressly invoke the means plus function claiming style allowed by Section 112, ¶ 6. This style provided Burst very meaningful advantages in securing these claims from the Patent Office. The trade-off for that advantage, however, is that Burst's claims must be construed to cover the structure the specification describes as performing the claimed functions and its equivalents – no more. This required analysis shows that these claims are limited to the specialized hardwired approach that Mr. Lang disclosed in the patent specification and do not cover general purpose computers.

Burst also relied upon other claim terms in dispute to obtain its patent claims. For example, many of Burst's claims use the term "time compressed." Even though the prior art before the Patent Office used this term consistent with its ordinary meaning – the meaning Microsoft proposes – Burst now offers another definition, relying on its expert's opinion but no supporting evidence. Burst's proposed construction of "time compressed" is belied by the simple fact that the claims would have been invalid over the very prior art considered by the Patent Office. The issuance of the patent claims cannot be harmonized with Burst's proposed construction of this term.

Similarly, Burst read its claims requiring the "time compressed representation" of the audio/video data to have an "associated burst time period" to cover any and every time period during which the compressed data is transmitted. Yet, if that were true, then Patent Office never would have issued the claims because they would not have been any different from the prior art the Examiner considered. Moreover, Burst's proposed construction tramples the plain meaning of the claim language and cannot be sustained.

Similarly, although used in only some of the claims in dispute, terms like "transceiver" have known meanings and are used consistent with their ordinary meaning in Burst's claims. Rather than accept this plain meaning, Burst proposes constructions designed to ensnare Microsoft software.

In the final analysis, claim construction is an issue of law for the Court to resolve. The goal of this process is to construe Burst's claims in sufficient detail for the jury to understand what the claims cover and what they do not. The constructions Microsoft proposes do just that, in harmony with the plain meaning of the claim language and the other intrinsic evidence, including the basis on which the claims were issued in the first instance.

II. Burst's Patents

A. The Original Patent Specification

In December 1988, Richard Lang filed the application for the first of the three patents-in-suit. In that application, he disclosed a specific "VCR-ET" – a VCR with extended capabilities. The VCR-ET is described as an "audio/video transmitter/receiver 22 with keypad 45, all in a common housing" (Ex. A, '995 patent, col. 3, lines 36-37 (emphasis added)) and envisioned as a consumer electronics item. Ex. A, Figure 1.

The VCR-ET receives uncompressed audio/video data from an RF (radio frequency) tuner, video line or camera, auxiliary digital input port, or fiber optic input/output port after a user presses a button on the front of the unit to activate a mechanical selector switch and select which

source of uncompressed data the VCR-ET will receive. *See* col. 7, lines 1-44. The VCR-ET may also receive compressed data from a fiber optic port. *See* col. 7, lines 58-60.

As described, the uncompressed data for a full two hour movie consumes over 51 gigabytes of memory. Rather than storing all that data at once, the patent describes using a RAM 29 large enough to hold only a frame or two of video data. The video data is compressed to reduce its size as is received, thereby resulting in 250 megabytes of data rather than 51 gigabytes.[1] *See* col. 5, lines 20-24.

Because the live video described in the patents contains about 30 frames per second (*see* col. 4, lines 53-54), the system must compress the video data at this rate as well. If the compression process cannot process the video data at the rate it is received, the video frames would back up and the disclosed system would have nowhere to store them. *See* Exhibit D, Declaration of Brian Von Herzen ("Von Herzen Decl."), ¶ 25.

In his original specification, Mr. Lang described using a particular hardware compression chip, an AMD 7971, to time compress the audio/video data. The AMD 7971 is a hardware compression chip that implements the CCITT Group IV facsimile compression algorithm on two-tone images. It is not a microprocessor or a general purpose processor. *See* Exhibit E, Deposition of Robert Louis Stevenson, Jr. ("Stevenson Dep.") at 287-290; . The AMD 7971 does not compress using software running on a general purpose processor. Stevenson Dep. at 236-37.

In addition to the CCITT Group IV compression performed by the AMD 7971, Mr. Lang mentioned using a "compression algorithm [that] can simply record data corresponding to only those pixels which change color from one frame to the next." Ex. A, '995 patent, col. 8, lines 11-13. Mr. Lang also mentioned compressing audio data using a "Fibonacci delta compression algorithm."

[1] A gigabyte is 1000 megabytes.

col. 5, line 35. The patent specification discloses only using the AMD 7971 to perform compression and never describes using software compression. *See* Ex. D, Von Herzen Decl., ¶ 36, 37.

The disclosed VCR-ET is a dedicated system for performing the functions described in the patent, akin to a consumer electronics device. The patents never describe the VCR-ET as a computer. To the contrary, although the patent specifications discuss receiving data from a computer, they never describe the system as a computer. *See* Ex. A, '995 patent, col. 7, lines 32-35.

The disclosed system uses two microprocessors, but they do not perform compression. *See* col. 5, lines 46-56; col. 6, lines 53-63. One microprocessor, CPU 28, acts as a controller that tells the other components of the system what to do and when to do it. This microprocessor never performs any compression, but instead controls the other hardware that does compress the data. *See* Ex. D, Von Herzen Decl., ¶ 38; Ex. A, '995 patent, col. 5, lines 46-49 ("The CPU (Central Processing Unit) 28 is a microprocessor which **controls** the digitization process of VCU 12. CPU 28 works with controller 27 to **control** and **communicate with** the other elements of the VCU.") (emphasis added). The patents-in-suit also use a second microprocessor, CPU 31. This microprocessor executes the computer code stored in a Read Only Memory ("ROM") 32 when a user seeks to edit the audio/video material. *See* Ex. A, '995 patent, col. 6, lines 53-63.

According to the '995 patent, the VCR-ET stores the compressed audio/video data in a RAM memory or on an optical disk with a compressed 2 hour movie requiring 250 megabytes of memory. *See* col. 5, lines 22-24. This was an extraordinary amount of memory in 1988. *See* Ex. D, Von Herzen Decl., ¶ 48. In fact, personal computer hard drives in 1988 typically had only tens of megabytes of storage, not hundreds. *Id.*

The original disclosed system describes transmitting the compressed audio/video data over a standard telephone line, a fiber optic telephone line, or a fiber optic line. These links directly connect one VCR-ET to another. *See* Ex. A, '995 patent, col. 9, lines 59-62 ("The data from memory 13 is then routed to line 43, transmitter/receiver 22 and to a telephone line. At the other end of the

telephone line the signals received are processed by another VCR-ET."); col. 7, lines 51-55 ("The incorporation of fiber optic port 18 in the VCR-ET provides a capability for receiving audio/video signals from or delivering audio/video signals to the fiber optic line such as a fiber optic telephone line.").

In 1988, both standard telephone lines and fiber optic telephone lines provided a wire-like connection between two parties. This connection is commonly referred to as a "circuit switched" connection because the telephone company creates a circuit between the two parties. This connection allows only a certain amount of data to be transmitted per second. *See* Ex. D, Von Herzen Decl., ¶ 21; Ex. E, Stevenson Dep. at 73-74. When one orders a telephone line, whether standard or fiber optic, one receives from the telephone company a guarantee of a certain level of service, no more, no less. In the patents, the fiber optic telephone line was said to have a 200 megabytes/second bandwidth. *See* Ex. A, '995 patent, col. 7, lines 55-58.

In 1988, fiber optic telephone lines were available to users as leased lines. *See* Ex. D, Von Herzen Decl., ¶ 22. Leased connections connect two predetermined locations but do not allow dialing or choosing a different location. Instead, a leased connection acts as a circuit between two predetermined points, whereby connecting to the line on one end immediately connects the user to the other end (like the "red" phone that connected the White House to the Kremlin during the Cold War).

Using this high speed connection (described as 200 megabytes/second) to transmit a two hour movie compressed into a known size (250 megabytes), one can calculate that the disclosed system transmits the movie in 1.25 seconds.[2] *See* Ex. D, Von Herzen Decl., ¶ 48. The patents provide no other examples of "faster than real time" transmission.[3]

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[2] $\frac{\text{250 megabytes}}{\text{200 megabytes/second}} = 1.25 \text{ seconds}$

[3] The '995 patent also describes using a telephone line to transmit compressed audio/video data but explains that "the band width of a conventional phone line is at present much narrower than the signal band width of an optical fiber, and thus the data transmission rate on telephone lines is much slower than the transmission rate for an optical fiber. Accordingly, the

B. **The Continuation in Part Specification**

In May 1989, Burst filed an extension to its original application as a continuation in part ("the c-i-p application"). This new application ultimately issued as Burst's U.S. Patent No. 5,057,932 ("the '932 patent"). Burst does not assert that Microsoft infringes this patent. However, both the '839 and the '705 patents-in-suit descend from this new application.

Burst's c-i-p application refers to the VCR-ET as "an improved audio/video recorder editor/transceiver 10 (VCR-ET)" (Ex. C, '705 patent, col. 3, lines 40-41) and adds a microwave communication link, described as "point to point." col. 11, lines 26-51. A point-to-point connection, as its name implies, is a direct circuit between two parties, similar to a child's two tin cans connected by a string. Unlike a circuit switched connection, which dynamically creates a connection, a point-to-point link lacks switching and represents a direct wired connection between two parties. *See* Ex. D, Von Herzen Decl., ¶ 21-22. The fiber optic line described in both applications could also be implemented as a direct connection with the fiber optic line directly connecting two VCR-ETs.

Burst's c-i-p application made other changes to the specification as well. This application do longer has the citation to the AMD 7971. *See* Exhibit F, Deposition of Richard Lang ("Lang Dep."), at 131. Instead, this specification identifies no structure for performing the disclosed compression algorithms. *See* Ex. F, Lang Dep. at 131; Ex. E, Stevenson Dep. at 37; Ex. D, Von Herzen Decl., ¶ 37. This application also discloses using a magnetic disk to store compressed audio/video. *See* Ex. C, '705 patent, col. 6, lines 24-29.

Interestingly, Burst also removed the statement that a telephone line could only transmit audio/video data slower than real time. The c-i-p application never asserts, however, that a telephone line could transmit audio/video data faster than its normal viewing time.

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time required to communicate a video program over a conventional phone line may exceed the time it takes to view the program." col. 8, lines 50-57. All Burst's claims require transmission in less time than it takes to view the program. The telephone line is therefore not covered by Burst's claims and irrelevant to claim construction.

C. **Technology Absent From The Patent Specifications**

The patents-in-suit describe a specific, dedicated hardware implementation using a dedicated communication link between two VCR-ETs. Burst, nonetheless, boldly seeks to broaden its patents to cover software, such as Microsoft's, which uses packets and the Internet for communication and which runs on a general purpose personal computer.

The patents-in-suit never mention packet switched networks or the Internet. *See* Ex. E, Stevenson Dep. at 66; Ex. D, Von Herzen Decl., ¶ 20. Packet switching is a network technology that breaks each communication into a set of small messages, called packets. *See* Ex. E, Stevenson Dep. at 84. The only communication links described in the patents, however, are either circuit switched – *i.e.*, a telephone line or fiber optic telephone line – or direct – *i.e.*, fiber optic line or microwave. In fact, Mr. Lang testified that he had not even heard of the Internet in 1988 when these patents were filed. *See* Ex. F, Lang Dep. at 57. Not only do the patents not mention a packet switched network, the patents do not even mention packets, an obvious precursor to using a packet switched network. *See* Ex D, Von Herzen Decl., ¶ 20.[4]

Most importantly, the described system would need to be significantly redesigned to work with a packet switched network. *See* Ex D, Von Herzen Decl., ¶ 20. The patents do not address any of the technical obstacles necessary to use a packet switched network to transmit audio or video data such as addresses, headers, out of order packets, latency, and lost packets. *See* Ex. E, Stevenson Dep. at 93; Ex. D, Von Herzen Decl., ¶ 20. Burst's patents are silent on all these issues because the patents describe a system designed to work over a circuit switched or direct connection, not the Internet, where systems do not have to manage these issues.

Burst's patents also do not disclose streaming audio or video content. To the contrary, Burst's patents describe a system that first transmits the multimedia content and then plays it. *See*,

e.g., Ex. B, '839 patent, col. 8, lines 27-33 ("It is also envisioned that in the future, a video library may be established which downloads video programs at an accelerated rate via optical fibers to a subscriber's VCR-ET. After downloading, the program may be viewed, stored in memory, edited and/or a hard copy of the program may be made on magnetic tape, optical disk, etc."). Streaming focuses on playing the content as it is received, with emphasis on techniques to ensure that the data arrives fast enough to avoid interrupting playback. This is not an issue addressed in any of the Burst patents because, as described in those patents, the entire audio/video program is received before playback begins.

Burst's patents disclose and claim a specific limited invention. *See* Ex. F, Lang Dep. at 43; Ex. E, Stevenson Dep. at 287-88. Richard Lang did not invent faster than real time transmission of audio/video data. The prior art clearly shows that, including U.S. Patent No. 4,506,387 to Walter ("the Walter patent") which the Examiner considered before granting Burst's patents. *See, e.g.*, Exhibit G, '387 patent, col. 7, lines 44-47 ("a two hour movie can be transmitted in about 31 seconds."). As analyzed in detail below, Burst's claim language reflects the individual system Mr. Lang invented and restricts Burst's patents to a far narrower scope than it now asserts.

D. **File History**

The original claims filed with Mr. Lang's patent application did not include many of the terms at issue here, including "time compressed representation," "associated," and "compression means." Exhibit H, BUR5131194-1202. The Patent Office rejected these original claims on October 11, 1989 based on the prior art. In response, Burst added many of the terms in dispute for the obvious purpose of narrowing its claims to obtain a patent.

Importantly, Burst also added the means plus function claim elements at issue here after this initial rejection. As the Examiner undoubtedly recognized, a patent where the inventor chose to

[4] Although Burst points out that portions of packet switched networks can run over circuit switched networks (and *vice versa*), the patents never mention using a circuit switched network in this manner (or a packet switched network at all). *See*

use the claiming shorthand allowing "means plus function" claims is limited to the disclosed embodiments and their equivalents. *See In Re Donaldson*, 16 F.3d 1189, 1195 (Fed. Cir. 1994) (applying limitations of Section 112 ¶ 6 to Patent Office patentability determinations). With such a limited scope, the Examiner allowed Burst's first patent, the '995 patent, containing only apparatus claims in means plus function form.

Burst next obtained method claims based on the modified disclosure its c-i-p application. In allowing the method claims of the '839 patent, the Examiner explained that Burst's claims were allowable only because the prior art did not include "the step of compressing the received audio/video source information into the time compressed source information having a burst time period." Ex. V, '839 patent file history, Reasons for Allowance. As shown below, Burst seeks to read its claims so broadly that they no longer require "the time compressed source information having a burst time period."

Also, during the prosecution of the '839 patent, Burst gave the Examiner U.S. Patent 4,506,387 to Walter ("the Walter patent"). The Walter patent issued in 1985, long before Burst's filing. Walter describes a programming-on-demand cable system that allows a user to select any one of a number of stored video programs for viewing at any time. *See* Ex. G, '387 patent, col. 1, lines. 42-50; *see* Ex. D, Von Herzen Decl., ¶ 33. The Walter patent also discusses compressing audio/video data: "By utilizing inter-frame differential pulse code modulation [a form of compression], each second of video program playing time yields about 44 megabits." col. 7, lines 37-39. In the Walter patent, the video programs are stored in compressed form. *See* col. 7, lines. 17-28. The Walter patent delivers the video programs faster than the view time of the desired program, explaining that "a two hour movie can be transmitted in about 31 seconds." col. 7, lines. 37-47. Thus, like Burst's patents, the Walter patent describes compressing audio/video data and transmitting it faster than its play time – *i.e.*, "faster than real time." As his Reasons for Allowance indicates, the Examiner recognized that,

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Ex. E, Stevenson Dep. at 120; Ex. D, Von Herzen Decl., ¶ 20.

consistent with its ordinary meaning, the claimed "time compressed representation" required a very specific type of compression. Otherwise, the patents-in-suit would have never issued in view of the Walter patent.

After receiving the '839 patent, Burst continued seeking claims based on its continuation in part application, ultimately receiving the '705 patent. The '705 patent contains both method and apparatus claims. As in the '995 patent, the apparatus claims in the '705 patent are written entirely in means plus function form and are thus limited by the patent statute to the disclosed structure and its equivalent. The '705 patent also differs from the other two patents-in-suit because all of its claims require that the transmission time be "substantially shorter" than the play time, rather than just shorter.

III. Technological Background

A. Audio and Video Processing

Humans are analog beings, perceiving fluctuations in air pressure as sound and certain electromagnetic frequencies as light. Electronic devices can capture and reproduce these analog signals. For example, a microphone captures analog audio and a video camera captures analog light. Both then produce an analog electric signal that represents the original audio or video. *See* Ex. D, Von Herzen Decl., ¶ 4.

The analog representation of audio or video is a continuous wave that at any point in time represents the audio or video at that instant. Analog representations are hard to process and hard to store and to transmit accurately. Because the analog wave form itself represents the audio or video, analog representations are sensitive to noise because it is hard to separate noise from the audio or video signal. *See* Ex. D, Von Herzen Decl., ¶ 5.

Audio and video signals can also be represented as digital signals. Transforming an audio or video signal into digital form requires sampling the analog wave at discrete times and recording the value of the wave at those times – the more samples the better and more accurate the

digital representation of the original analog signal. However, using more samples increases the amount of digital data required to represent the original audio or video. *See* Ex. D, Von Herzen Decl., ¶ 6.

Digital video comprises a series of still pictures, called frames. Video appears to show motion because each frame is slightly different from the frame before and after it. When the frames are displayed one after another (as described in the patents, generally at 30 frames per second), the viewer experiences a sense of uninterrupted motion, called "motion fusion." *See* Ex. D, Von Herzen Decl., ¶ 8.

In standard television quality video, each frame has as many as 480 horizontal lines of pixels and approximately 720 pixels per line. Thus, a single frame of standard definition TV (SDTV) has as many as 345,600 pixels. SDTV in the United States uses approximately 30 frames per second of video, meaning over 10 million pixels per second. At 24 bits per pixel, SDTV may include nearly 270 million bits per second. *See* Ex. D, Von Herzen Decl., ¶ 9. The longer the audio or video program, the more digital data is required to represent it.

Because of the huge data volumes needed to store digital audio or video content, transmitting these files across a network can take a very long time. Moreover, because file size is partially dependent on the length of the content, longer content takes more time than shorter content to transmit. Thus, first transmitting an entire audio or video file and then playing the content was impractical for content longer than a few seconds because doing so required a user to wait a long time before the content could be played. *See* Ex. D, Von Herzen Decl., ¶ 10.

Systems, such as the one described in the Walter prior art patent, were developed to allow users to start enjoying content more quickly. In his 1985 patent, Mr. Walter describes compressing the video programming content and transmitting it over a very high capacity (*i.e.*, bandwidth) set of communication links. According to this patent, "a two hour movie can be

transmitted in about 31 seconds." Ex. G, '387 patent, col. 7, lines 44-47. Thus, a user could start watching a full-length movie less than a minute after ordering it.

An alternative technology, called streaming, was developed with the advent of the Internet. Streaming allows audio or video content to be played as the file is received, eliminating the need to receive all the content before starting to play it. Conceptually, streaming is like conventional broadcast television. One watches a television program as it is received. With streaming, the content begins to play after the system receives only some minimum amount of data. Thus, the length of the content no longer directly controls the amount of time before the user starts to enjoy the content. *See* Ex. D, Von Herzen Decl., ¶ 11.

B. **Data Compression**

All data stored in digital electronic form is represented by a series of bits where each bit is either a "1" or a "0." As explained above, a very large number of ones and zeros are necessary to represent an audio or video signal. *See* Ex. D, Von Herzen Decl., ¶ 12.

Data compression is the process of reducing the amount of data necessary to represent some information such as a program, database data, audio, or video. Compression is useful to reduce the space needed to store data and the transmission time needed to send it. *See* Ex. D, Von Herzen Decl., ¶ 13.

In 1988 (and today), there are many kinds of data compression. "Lossless" data compression compresses data so that the exact original data can be recovered. Lossless data compression is necessary for data, like programs or databases, where the original data must be precisely recoverable. Lossless compression, however, can compress data only so small. In many cases, such limited compression is insufficient. *See* Ex. D, Von Herzen Decl., ¶ 14.

When exact recovery of the original is not necessary, "lossy" compression can provide greater compression than lossless compression. Lossy compression compresses data by discarding some of the original data, leaving only an approximation of the original data recoverable from the

compressed data. Lossy compression is very useful for audio and video content. By accounting for the way humans hear and interpret visual information, lossy compression can selectively discard audio and video data, leaving decompressed audio or video data that is perceived to be similar to the original and minimizing the effect of not being able to recover all the original data. *See* Ex. D, Von Herzen Decl., ¶ 15. Because it discards some of the original data, lossy compression allows control over the amount of compression and thus the size of the compressed data. *See* Ex. D, Von Herzen Decl., ¶ 16.

Lossy compression allows time compressing data. Time compressing data involves compressing data, usually time-variant data like audio or video, to be transmitted within a prescribed time slot. The size of the time compressed data is chosen based on the intended use of the data. For example, if the time compressed data must be sent over a transmission link at 56 kilobits/second (a common modem speed) in 10 seconds (even if it represents more than 10 seconds of data), the original audio or video data must be compressed into no more than 560 kilobits, so it can be transmitted over this link in 10 seconds – *i.e.*, 56 kilobits/second x 10 seconds. *See* Ex. D, Von Herzen Decl., ¶ 17.

Video data is often compressed using a combination of two techniques, each of which can be either lossy or lossless, but are generally lossy. Intra-frame compression compresses each frame of the video, thus reducing its size and the time it takes to transmit. To obtain additional compression, inter-frame compression reduces the size of the video data by noting the differences between each frame, which are generally small, and storing or transmitting only the differences. *See* Ex. D, Von Herzen Decl., ¶ 18.

C. **Audio and Video Formats**

Compressed audio and video data must be assembled into a known format. Common audio formats include wav, mp3, and Windows Media Audio (wma). Common video formats include MPEG2 (used for DVDs, digital cable television, and satellite systems) and Windows Media Video (wmv). *See* Ex. D, Von Herzen Decl., ¶ 19.

Multimedia formats include the compressed data needed to playback or render the content – *i.e.*, the data that represents the audio and video. Within the audio/video file, many of these formats also include data about the content, such as the compression technique used, copyright information, and the content's play time. Windows Media Audio and Video formats do not include the transmission time of the content in the multimedia file.

D. **Hardware and Software Implementations**

Digital data generally can be processed in one of two ways, using (1) special purpose, dedicated hardware or (2) software running on a general purpose computer. The patents-in-suit, for example, describe using special purpose hardware to perform compression but never describe using software compression. *See* Ex. D, Von Herzen Decl., ¶ 37.

The choice of using software or hardware depends on many factors and often the two are not interchangeable. That software and hardware are not interchangeable was even more true in 1988 than it is today because software solutions ran on much slower computers. For example, the same compression algorithm might be implemented in hardware or in software. But implementing that compression algorithm in hardware or software would involve different strategies and different performance levels. *See* Ex. D, Von Herzen Decl., ¶ 28.

For example, software implementations sometimes can be more flexible than hardware because their programming can be changed. Software also performs some tasks better than hardware, influencing, for example, how one would implement a compression algorithm. Software can process conditional statements efficiently, allowing implementations to consider many alternatives intelligently and only process data relating to the alternatives most likely to be successful. *See* Ex. D, Von Herzen Decl., ¶ 29.

Conversely, hardware is generally much faster than software. But hardware implementations tend to be inflexible in that they generally are not changeable. Implementing, for example, an algorithm in hardware also utilizes different strategies than doing so in software. Unlike

software, hardware implementations do not efficiently allow choosing preferred alternatives. But hardware, because of its speed, allows a brute-force approach where all possible results can be tested for the best outcome. *See* Ex. D, Von Herzen Decl., ¶ 30.

In 1988 when the patents-in-suit were filed, computers were not fast enough to compress video at the same rate it is received from a camera or other source. *See* Ex. D, Von Herzen Decl., ¶ 26. The patents-in-suit describe receiving video, compressing it, storing the compressed video, and then transmitting it. *See* Ex. A, '995 patent, col. 4, lines 48-54. A software compression implementation would not have been able to compress the video described in the patents at the required rate. *See* Ex. D, Von Herzen Decl., ¶ 26. At that time, even a supercomputer with 64 processors needed 3 seconds to process each video frame, almost 100 times too slow to compress the video described in the Burst patents. *See* Exhibit I, Arch C. Luther, *You are there ... and in control*, IEEE Spectrum (September 1988) at 46.

E. **Microsoft's Accused Software**

Microsoft offers this short summary of its accused software although this software has no applicability to the proper construction of Burst's patent claims. *NeoMagic Corp. v. Trident Microsystems, Inc.*, 287 F.3d 1062, 1074 (Fed. Cir. 2002) ("It is well settled that claims may not be construed by reference to the accused device.") Nonetheless, Microsoft's accused software frames the claim construction issues by influencing what parts of Burst's claims require construing. *See DeMarini Sports, Inc. v. Worth, Inc.*, 239 F.3d 1314, 1330 (Fed. Cir. 2001).

Burst accuses Microsoft's Windows Media Series 9 software of infringing. In particular, Burst accuses the Fast Start and Fast Cache features of Windows Media Series 9. Neither feature is used for every transmission, and both work only when bandwidth is available above the minimum needed to transmit the multimedia content at the rate needed for viewing. Because of the nature of the Internet, the transmission bandwidth to different users varies.

Fast Start attempts to minimize the amount of time between a user clicking on a link to request content and that content starting to play. To do so, Fast Start sends data faster than the encoded bit rate of the content – *i.e.*, it can send the data in less time than the content would take to play. Fast Start, however, only sends the first few seconds of content. These first few seconds are necessary before playback can begin.

Unlike Fast Start, Fast Cache operates, when possible, throughout the content transmission. Fast Cache sends audio or video streams to the recipient in less time than the content would take to play. Fast Cache stores the data representing the content on the recipient's machine until it is needed for playback.

Windows Media Series 9 includes several pieces of software that perform different tasks, Windows Media Encoder, Windows Media Server, and Windows Media Player. Each runs on a personal computer. No part of Windows Media Series 9 utilizes dedicated, specialized hardware.

Windows Media Encoder transforms digital audio or video streams into Windows Media format. Windows Media Encoder also compresses these streams so that they take less space on a disk and take less time to transmit. Windows Media format does not store a faster than real time transmission time in the audio or video files, and the Windows Media format files reflect no relationship between the time it takes to play the content and the time it might take to transmit the file.

And, in fact, an audio or video file's transmission time is unknowable when Windows Media Encoder compresses the audio or video data. Transmission speeds on the Internet vary widely between different users so the same data is transmitted to different users in different amounts of time.

Windows Media Series 9 also includes Windows Media Server. Windows Media Server transmits audio and video data to end user computers over the Internet or another packet switched network when requested by a Windows Media Player client. Windows Media Server obtains audio or video data from a file and transmits the data over such a network.

Windows Media Server also supports playlists. A playlist is a list of audio or video content. *See* Ex. D, Von Herzen Decl., ¶ 53. Windows Media Server will transmit each of the items on a playlist in the order listed without requiring intervention from the user.

Finally, Windows Media Series 9 includes Windows Media Player. Windows Media Player runs on end-user computers and receives audio and video content delivered by Windows Media Server via the Internet. Windows Media Player renders the content, transforming it into audio and video for the end-user's enjoyment.

IV. Claim Construction

Claim construction is the process of determining what Burst's claims mean and thus what it owns. The claims of Burst's patents define the scope of Burst's property rights. *See General Foods Corp. v. Studiengesellschaft Kohle mbH*, 972 F.2d 1272, 1274 (Fed. Cir. 1992). Burst must prove that each claim element, properly construed, is present in Microsoft's accused software. Burst does not have a patent on any single aspect of its claims, only the elements of the claims taken as a whole. *See id.*

"In construing claims, the analytical focus must begin and remain centered on the language of the claims themselves, for it is that language that the patentee chose to use to 'particularly point[ ] out and distinctly claim[ ] the subject matter which the patentee regards as his invention.'" *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1202-03 (Fed. Cir. 2002). "The terms used in the claims bear a 'heavy presumption' that they mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art." *Id.* at 1203. This ordinary meaning should be determined from the public record, which offers:

> objective resources that serve as reliable sources of information on the established meanings that would have been attributed to the terms of the claims by those of skill in the art. Such references are unbiased reflections of common understanding not influenced by expert testimony or events subsequent to the fixing of the intrinsic record by the grant of the patent, not colored by the motives of the parties, and not inspired by litigation. Indeed, these materials may be the most meaningful sources of information to aid judges in better

> understanding both the technology and the terminology used by those skilled in the art to describe the technology.

Id. at 1203. The Court should thus treat carefully Burst's offer of expert testimony. *See also Vitronics Corp. v. Conceptronic Corp.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996).

The meaning of the claims – what is in their scope or outside it – is an issue of law for the Court. *See Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1320 (Fed. Cir. 2003). In construing Burst's patent claims, the Court should provide an explanation of what each disputed claim term means such that the Court's construction clearly delineates what is covered by the claims and what is not. *See Sulzer Textil A.G. v. Picanol N.V.*, 351 F.3d 1120, 1129 (Fed. Cir. 2003) ("the district court normally will need to provide the jury in a patent case with instructions adequate to ensure that the jury fully understands the court's claim construction rulings and what the patentee covered by the claims."). A definition that does not clearly delineate claim scope is improper. *See id.* "[T]he claim construction obligation . . . involves not only properly construing the claim language so that the litigants (for the most part skilled in the particular art) will understand it, but also teaching the chosen construction to the jury in language that will inform the jury in plain English the legal framework it must apply in order to do justice." *MacNeill Engineering Co., Inc. v. Trisport, Ltd.*, 126 F. Supp.2d 51, 56 (D. Mass. 2001). Without the appropriate level of specificity in claim construction, "[t]he very real risk . . . is that misconceptualizations and imprecision of language will creep in and relevant claim limitations will be obscured or deleted." *Id.*

Several background rules of claim construction apply in construing Burst's patent claims. First, the Court must give meaning to all the terms in Burst's claims. *Exxon Chem. Patents, Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1557 (Fed. Cir. 1995). Terms cannot be ignored. Moreover, Burst's claims must be construed as a whole so that their terms make sense in the overall context of the claims. Individual words should not be construed out of context. Moreover, while the specification informs the claim construction process, Burst's claims extend only to what it has claimed, not to

everything the specification describes. *See Johnson & Johnston Assocs. v. R.E. Serv. Co.*, 285 F.3d 1046, 1052 (Fed. Cir. 2002) ("Consistent with its scope definition and notice functions, the claim requirement presupposes that a patent applicant defines his invention in the claims, not in the specification. After all, the claims, not the specification, provide the measure of the patentee's right to exclude.").

Second, where possible, Burst's claims should be construed to be valid over the prior art. *See Harris Corp. v. IXYS Corp.*, 114 F.3d 1149, 1153 (Fed. Cir. 1997). This maxim is particularly relevant to prior art like the Walter patent that the Patent Office reviewed before it allowed Burst's claims. Because the Examiner reviewed such art, Burst's claims presumably differ from it. *See id.*

Third, to the extent that any of Burst's claims are ambiguous, they must be read narrowly. *See Athletic Alternatives, Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573, 1581 (Fed. Cir. 1996). Where the ordinary meaning is unclear and the intrinsic evidence does not provide a clear meaning, the Court should adopt a narrow meaning. Burst drafted its claims and thus must take responsibility for any ambiguity in claim scope.

Fourth, in most situations, an analysis of the intrinsic evidence alone – claims, specification, and prosecution history – will resolve any ambiguity in a disputed claim term. *Vitronics*, 90 F.3d at 1583. In such circumstances, "it is improper to rely on extrinsic evidence." *Id.* "[C]ompetitors are entitled to review the public record, apply the established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention." *Id.* The court should be particularly wary of extrinsic evidence in the form of expert testimony. Such "opinion testimony on claim construction should be treated with the utmost caution." *Id.* at 1585. Indeed, where the patent documents are unambiguous, expert testimony regarding the meaning of a term is entitled to "no weight." *Id.*

In addition to offering an opinion inconsistent with the intrinsic evidence, Burst's expert in many cases fails to identify proper support for his opinions, instead citing generally to the

specification or to his knowledge. *See e.g.*, Ex. E, Stevenson Dep. at 13. But conclusory statements about the meaning of the disputed claim term are entitled to no weight. *See Arthur A. Collins, Inc. v. N. Telecom, Ltd.*, 216 F.3d 1042, 1047-48 (Fed. Cir. 2000); *Vitronics*, 90 F.3d at 1583. Dr. Stevenson's opinions are no different from post-hoc testimony offered by an inventor to rewrite the claims; Burst has simply hired a proxy for the inventor. *See Bell & Howell Document Mgmt. Prods. Co. v. Altek Sys.*, 132 F.3d 701, 706 (Fed. Cir. 1997) ("The testimony of an inventor and his attorney concerning claim construction is thus entitled to little or no consideration. The testimony of an inventor often is a self-serving, after-the-fact attempt to state what should have been part of his or her patent application."). Although claim terms are to be construed from the perspective of one of skill in the art, such a rule does not transform the claim construction process into a swearing contest between experts; experts must rely on the intrinsic evidence and physical evidence for their opinions. *See Aqua-Aerobics Sys., Inc. v. Aerators, Inc.*, 211 F.3d 1241, 1245 (Fed. Cir. 2000) ("Expert testimony is often useful to clarify the patented technology and to explain its meaning through the eyes of experience, but it may not correct errors or erase limitations or otherwise diverge from the description of the invention as contained in the patent documents.").

V. Claim Terms In Dispute

A. "Time Compressed Representation"

All Burst's claims require the "audio/video source information" to be compressed into a "time compressed representation." Microsoft asks the Court to construe "time compressed representation" consistent with its ordinary meaning to mean compressing the audio/video source information sufficiently small so that it can be transmitted in a predetermined time period – *i.e.*, a time period known when the data is compressed. Circuit switched and direct communications links commonly have a fixed bandwidth and thus can only transmit so much data per second. Time compressing data allows it to be transmitted over the available bandwidth in a known, predetermined amount of time, ensuring that the data is received within a known amount of time and does not arrive

too late to be useful. *See* Ex. E, Stevenson Dep. at 76. Time compression does not work over the Internet. *See* Ex. D, Von Herzen Decl., ¶ 32.

Ignoring the term's ordinary meaning, Burst defines "time compressed representation" so broadly that its claims cover the prior art Walter patent. *See Harris Corp.*, 114 F.3d at 1153 ("claims should be read in a way that avoids ensnaring prior art"). Burst argues that the "time compressed representation" requires only "reduc[ing] a temporal quality of the information." Exhibit J, Burst's Proposed Claim Construction at 15. Burst thus defines "time compressed representation" to cover any compression where the compressed data is transmitted faster than its normal play time. *See* Ex. E, Stevenson Dep. at 7-8. Such a broad construction causes Burst's claims to read directly on the Walter patent, even though the Examiner knew of that patent and allowed Burst's claims only because Burst's claims required "compressing the received audio/video source information into the time compressed source information having a burst time period." Ex. V, '839 patent file history, Reasons for Allowance.[5] The Walter patent explains that a compressed video program can be sent in less time than it takes to view the program: "a two hour movie can be transmitted in about 31 seconds." Ex. G, '387 patent, col. 7, lines 44-47; Ex. D, Von Herzen Decl., ¶ 33. The Examiner allowed these patents over the Walter patent because they require a "time compressed representation" and the Walter patent does not use a "time compressed representation," although the Walter patent undeniably compresses data and transmits it faster than its play time. *See* Ex. D, Von Herzen Decl., ¶ 33. Therefore, Burst's claims must be construed not to read on the Walter patent.

Burst's proposed construction, moreover, equates data compression with time compression although it told the Patent Office that the two are different. Compressed data always requires less time to transmit than the original uncompressed data because it is smaller, thus "reduc[ing] a temporal quality of the information." *See* Ex. D, Von Herzen Decl., ¶ 13; Ex. E,

[5] The Walter patent was before the Patent Office during the prosecution of the '839 and '705 patents.

Stevenson Dep. at 43-44. By defining "time compressed" to reach any compression, Burst's construction is inconsistent with its own statements to the Patent Office that time compression is not the same as data compression. In distinguishing prior art cited by the Examiner, Burst explained that "[w]hile Izeki et al. [a prior art reference] mentions data compression as one type of conversion process, this is not the equivalent by any means of applicant's specifically claimed time compression." Exhibit K, August 28, 1995 Amendment "C" at 6 (Appl. No. 07/976,542, abandoned) (emphasis added); *see also* Exhibit L, January 4, 1991 Amendment "B" at 8 (U.S. Patent No. 5,057,932) ("No time compression whatsoever takes place in video compressor 25 or in any other portion of the apparatus of Southworth et al."). Although Burst also argued that these prior art references differed from its claims for other reasons, Burst cannot retract its statement that time compression differs from general data compression. *Cf. Southwall Tech. Inc. v. Cardinal IG Co.*, 54 F.3d 1370, 1376 (Fed. Cir. 1995). Burst's proposed definition of "time compressed representation" removes the distinction between data compression and time compression.

The intrinsic evidence is clear that in 1988, "time compress"[6] had a commonly understood meaning. *See Texas Digital Sys.*, 308 F.3d at 1202. There is a "heavy presumption" that the ordinary meaning of a claim term is the proper meaning unless "the patentee unequivocally imparted a novel meaning to those terms or expressly relinquished claim scope during prosecution." *Omega Eng'g,* 334 F.3d at 1223. Here, to the contrary, not only did Burst not "unequivocally impart[] a novel meaning" to "time compress" but it acquiesced in the ordinary meaning. Moreover, the specification provides no alternate definition – in fact, the specification does not use the term "time compress" at all.

[6] Microsoft uses "time compress," "time compressing," and "time compressed" interchangeably as required by the sentence structure. In prosecuting these patents, Burst also used these terms interchangeably. *See e.g.* Ex. K, Amendment C (August 28, 1995) (Appl. No. 07/976,542) at 6 ("Izeki et al. contains absolutely no recognition of the need for time compression of audio/video source information or of the transmission of time compressed audio/video source information in a burst time period."); Ex. L, Amendment "B," '932 patent (January 4, 1991) at 8-9 ("No time compression whatsoever takes place in video compressor 25 or in any other portion of the apparatus of Southworth et al. … In short, Southworth et al. contains

To one of skill in the art in 1988, time compression referred to a specific type of compression that compresses data sufficiently small to be transmitted in a predetermined transmission time. *See* Ex. D, Von Herzen Decl., ¶ 17. Time compression is commonly used with shared communications links where each user receives only a fraction of the link's total transmission capacity. Time compression is also used over fixed bandwidth transmission links to ensure that the data can be transmitted over the link within the necessary time. *See* Ex. D, Von Herzen Decl., ¶ 32.

This ordinary meaning is confirmed by the prior art cited and discussed during the prosecution of the patents-in-suit. Cited art considered during prosecution normally provides compelling evidence of the meaning of a claim term. *Kumar*, 351 F.3d 1364, *citing*, *Arthur A. Collins, Inc. v. Northern Telecom Ltd.*, 216 F.3d 1042, 1045 (Fed. Cir. 2000) ("when prior art that sheds light on the meaning of a term is cited by the patentee, it can have particular value as a guide to the proper construction of the term, because it may indicate not only the meaning of the term to persons skilled in the art, but also that the patentee intended to adopt that meaning.").[7]

During the prosecution, Burst and the Examiner discussed a prior art patent to Haskell, U.S. Patent 4,300,161 ("the Haskell patent"). *See* Exhibit M, August 4, 1997 Preliminary Amendment at 8. The Haskell patent is thus intrinsic evidence. *Kumar*, 351 F.3d 1364. After Burst and the Examiner apparently discussed this prior art patent in an interview, Burst acknowledged that the Haskell patent "teach[es] a system for time compression multiplexing so that multiple clients can receive audio/video information *in real time*." Ex. M, August 4, 1997 Preliminary Amendment at 8 ('705 patent file history) (emphasis in original). Thus, Burst differentiated the Haskell patent not

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absolutely no recognition of the need for transmitting and/or receiving full motion video programs at an accelerated rate as the result of time compression of those full motion video programs...").

[7] This case is even compelling than *Kumar* because, in *Kumar*, the parties disputed whether a dictionary definition or the definition from the cited art was appropriate. In this case, by contrast, the definition in the cited art is the only definition before the Court because Burst offers nothing more than its expert's attempt to give "time compressed representation" a broad meaning without offering any evidence to support that construction. *See* Ex. E, Stevenson Dep. at 11-12.

because it did not show time compression but because it was allegedly a real time system.[8] When presented with the opportunity to "unequivocally impart[] a novel meaning" (*see Omega Eng'g*, 334 F.3d at 1223) to "time compressed" – *i.e.*, that the Haskell patent did not define the claimed "time compressed representation" – Burst declined and instead argued that the Haskell patent differed from its claims for other reasons. This discussion of the Haskell patent in the file history also demonstrates that the Examiner was fully aware of the ordinary meaning of "time compression" and granted Burst's patents based on that knowledge.

As Burst acknowledged, the Haskell patent demonstrates the ordinary meaning of "time compression," and is even entitled "Time Compression Multiplexing Of Video Signals." In the first sentence of its "Summary of Invention," the Haskell patent explains that it describes an "improved apparatus for time compressing video signals." Exhibit N, Haskell Patent, col. 2, line 7-8. The Haskell patent then explains that "time compressing" video requires compressing it to fit into a predetermined transmission time slot:

> video signals from N respective, usually synchronized, sources are extended to respective ones of input terminals 111 through 11N of transmitter 100 and therein processed for compressing the N synchronized video signals into a predetermined time slot of a time multiplexed signal.

Haskell Patent, col. 2, lines 53-58 (emphasis added). The Haskell patent further explains that "transmitter 100 is for time compressing each of N synchronized video signals from a time duration T seconds to a time duration T/N seconds." Haskell Patent, col. 3, lines 55-57. In other words, the Haskell patent describes "time compressing" each video signal small enough to fit into a predetermined time slot. *See* Ex. D, Von Herzen Decl., ¶ 17. Burst's internal documents also show that it recognized that the Haskell patent involved the same time compression claimed in its patents.

[8] Microsoft does not agree with this assessment but the issue does not matter for claim construction because Burst cannot contradict its statements to the Patent Office.

See Exhibit O, BUR 5077355 ("the Haskell invention teaches time compression of a very short duration and for an entirely different purpose than that of the Lang invention.") (emphasis added).[9]

As the cited art shows, the Examiner was fully aware of the ordinary meaning of "time compress." Burst gave him no reason to think that it intended any other meaning. *See Omega Eng'g*, 334 F.3d at 1223. Now, after leading the Examiner to believe that it was claiming the use of a specific type of compression – *i.e.*, time compression – Burst asks this Court to ignore the ordinary meaning of "time compressed" and its own statements to the Patent Office. *See Laitram Corp. v. Morehouse Indus., Inc.*, 143 F.3d 1456, 1462 (Fed. Cir. 1998).

By ignoring this evidence, Burst construes "time compressed representation" much more broadly, arguing that it means "an information structure that reduces a temporal quality." Ex. J, Burst's Proposed Construction at 15. For this construction, Burst relies solely on its expert, Dr. Stevenson. Dr. Stevenson, however, relies on no evidence, instead finding his definition in a patent specification that does not even use the claim term. *See* Ex. E, Stevenson Dep. at 13, 26. But where the intrinsic evidence is unambiguous, expert testimony regarding the meaning of a term is entitled to "no weight." *Vitronics*, 90 F.3d at 1583.

Specifically, Burst's expert offers no evidence of an ordinary meaning for the term "time compress" or any evidence to support his construction. *See* Ex. E, Stevenson Dep. at 12.

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[9] Other cited art (and thus intrinsic evidence) shows the same ordinary meaning for time compression. United States Patent 4,736,239 to Sprague describes time compressing color information and inserting it into a television signal. As described by the '239 patent:

> Television transmission systems are known where, in order to avoid chrominance information in an analog signal cross-talking with luminance information in an analog signal, lines of chrominance information are time-compressed and are time-interleaved between lines of luminance information.

Exhibit P, '239 patent, col. 4, lines 59-64. Television signals follow a well-defined format with certain time periods in which color information can be inserted without adversely affecting the television picture. The Sprague patent describes digitally time compressing the chrominance data to fit into these defined time periods. Similarly, United States Patent 4,467,473 to Arnon explains:

> Typically in such [Time Compression Multiplexing] systems, the digital information signal to be transmitted is divided into discrete portions and **each portion compressed with respect to time to form a so-called "burst", occupying less than one half the time of the original portion**.

Rather, he uses two strategies to construe "time compressed representation": (1) parsing and construing the words "time" and "compressed" individually, and (2) reading the specification and attributing a broad meaning to this claim term, even though the specification never defines or even uses the term "time compressed." *See* Ex. E, Stevenson Dep. at 11-13.

Claim terms, and the words therein, are not construed outside of their usage in the claim. *See DeMarini Sports, Inc. v. Worth, Inc.*, 239 F.3d 1314, 1327-28 (Fed. Cir. 2001) ("[T]he language of the claims as allowed is what we construe, and it is that language that determines the limitations of the claim."). The collective term "time compressed" has a ordinary meaning. It is quite common for a term comprising multiple words to have a meaning different from its individual constituent words. For example, a "hot dog" is not a warm canine; nor is a "cat fish" a swimming feline. As with time compress, the ordinary meaning of these terms cannot be completely understood by reference to their component words.

In addition to parsing the words "time" and "compressed" individually, Burst's expert purports to find the definition of "time compress" in the specification although the term never appears there. Burst's expert reads the specification and concludes that time compressed means any compression where the result is transmitted faster than real time, ignoring the claim language, its ordinary meaning, and the file history. *See General Foods*, 972 F.2d at 1274. By focusing on a non-existent definition in the specification, Burst's expert ignores the intrinsic evidence in the cited prior art that actually uses and defines the "time compressed" term. *See* Ex. E, Stevenson Dep. at 13. *See Mycogen Plant Science v. Monsanto Co.*, 243 F.3d 1316, 1327 ("a patentee is free to be his own lexicographer, so long as the special definition of a term is made explicit in the patent specification or file history") (emphasis added). Burst chose to write claims using the term "time compressed," and that term therefore limits the scope of Burst's patents.

Exhibit Q, '473 patent, col. 1, line 32-41. Arnon explains that time compression is used to compress the data sufficiently to fit into this time slot.

Under Burst's construction, one cannot know if data is a "time compressed representation" until it is transmitted because only then does one know if a "temporal quality" of the information has been reduced. Ex. E, Stevenson Dep. at 9-10. Such a construction is completely inconsistent with the structure of the claims, which require compressing data into a "time compressed representation," storing that "time compressed representation," and finally transmitting that "time compressed representation." *See e.g.*, Ex. B , '839 patent, claim 1, col. 13, lines 1-16. The claims thus require that the "time compressed representation" exist without regard to any data transmission – or indeed even if the data is never transmitted.

In sum, not only would Burst's proposed construction of "time compressed" read on the prior art Walter patent, it completely ignores the ordinary meaning of "time compressed" and its own statement to the Patent Office that "time compression" is not ordinary data compression. In short, Microsoft proposes giving "time compressed representation" its ordinary meaning – data compressed sufficiently to be transmitted in a predetermined time period.

B. **"Associated Burst Time Period"**

All of Burst's method claims, and most of Burst's apparatus claims,[10] require creating a:

> time compressed representation thereof **having an associated burst time period** that is shorter than a time period associated with a real time representation of the received audio/video source information[11]

The "associated burst time period," in the context of the patents-in-suit, means a time, representing the transmission time, joined, united, or combined with the "time compressed representation" when it is created.[12] This "associated" time period must be part of or determinable from the time compressed representation itself and indicate how long the "time compressed" data takes to transmit. The "time

[10] Only claims 1 and 6 of the '705 patent, and claims dependent thereon, lack this limitation.

[11] Different claims use slightly different words to refer to this term, including the "associated time period," "associated burst time period," and "associated burst transmission time period." All three terms have the same meaning so Microsoft will not distinguish between them here.

[12] For example, the associated burst time period can be stored in the same file as the data representing the audio/video content.

compressed representation" has only a single "associated burst time period." As the claim language itself states, the "associated burst time period" must be less than the normal play time of the data.

The parties agree that the "associated burst time period" represents the transmission time for the "time compressed representation." But in its Proposed Construction, Burst ignores the key term "associated" and instead merely repeats that term in its proposed construction.[13] Although it proposed no construction in its Proposed Construction, Burst's expert argues that the "associated burst time period" does not have to be determined when the "time compressed representation" is created but is whatever time it ultimately takes to transmit the time compressed audio/video data. Ex. E, Stevenson Dep. at 177-78. Burst argues that such a time is "related to" the "time compressed representation" and therefore "associated" with it. The parties disagree, therefore, about whether the "associated burst time period" must be known when the "time compressed representation" is created, whether that transmission time must be part of the "time compressed representation" itself, and whether there can be a potentially infinite number of "associated" burst time periods.

Claim language must be interpreted in the manner used in the claims. *See Abbott Labs. v. Syntron Bioresearch, Inc.*, 334 F.3d 1343, 1351 (Fed. Cir. 2003). Here, the claim language requires "associat[ing]" the time period with the data when it is time compressed, not later when the data is transmitted:

> ***compressing*** the received audio/video source information ***into*** a time compressed representation thereof ***having an associated burst time period*** that is shorter than a time period associated with a real time representation of the received audio/video source information

Ex. B, '839 patent, claim 1 (emphasis added). According to this claim language, the act of compressing must result in a "time compressed representation having an associated burst time period." A time period only known later, when the data is actually transmitted, cannot be the claimed

[13] Burst's proposed construction is: "an information structure that reduces a temporal quality, the information structure having an associated time period that is shorter than a time period associated with an information structure that is consistent with a temporal quality of the external, physical world." Ex. J, Burst's Proposed Construction at 15.

"associated" time period because such a time is not "associated" when the "time compressed representation" is created. The "associated burst time period" exists as part of the "time compressed representation" without regard to any transmission, or even whether the "representation" is ever transmitted – the claim requires that the compressed representation "hav[e] an associated burst time period."

Burst defines the "associated burst time period" to be whatever time it later turns out is required to transmit the "time compressed representation." Although the claim language requires the "time compressed representation" to "hav[e] an associated burst time period," Burst's proposed construction would allow a potentially infinite number of "associated" burst time periods, with the "associated" time unknowable until the time compressed data has been transmitted and the transmission time determined. *See* Ex. E, Stevenson Dep. at 178. By claiming that the "time compressed" data "ha[s] an associated burst time period," Burst has claimed that the "representation" possesses a particular associated time period, not whatever time it ultimately takes to transmit the time compressed data. Such an infinite number of later-measured transmission times is also inconsistent with the claim language that requires a single "associated burst time period" – not time periods – be associated with the "audio/video source information" when it is compressed and be the same, single time period over which the "time compressed representation" is always transmitted.

The ordinary meaning of the claim language also requires that "associated burst time period" be stored as part of the "time compressed representation." "Associated" is an ordinary English word with an ordinary meaning: "to join or connect together: COMBINE … to bring together in any of various ways … to combine or join with other parts: UNITE" Exhibit R, *Webster's New Collegiate Dictionary* (1979) at 67. The claims thus use "associated" in its ordinary English sense to require uniting, joining, or connecting the "associated burst time period" with the time compressed data. *See Texas Digital Sys.*, 308 F.3d at 1202. Thus, the claim language requires being able to analyze the claimed time compressed audio/video data and determine its "associated" time. A time only known

when the "time compressed representation" is transmitted is not united, joined, or connected to the data and not determinable from the "time compressed representation."

As Burst reads this term, its claims are so broad that the requirement that the time compressed data "hav[e]" an "associated burst time period" disappears and the claims simply require transmitting audio/video data in less than its play time. *See General Foods*, 972 F.2d at 1274. But the prior art Walter patent, which the Patent Office has already found differs from these claims, discloses compressing video data and transmitting it faster than its play time. Ex. G, '387 patent, col. 2, lines 5-18. Although the Walter patent may yet invalidate Burst's claims, a proper claim construction should, where possible, read "associated" to avoid the prior art Walter patent. *See Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1384 (Fed. Cir. 2001).

Consistent with the claim language, the "associated burst time period" element requires associating, as Microsoft proposes, the transmission time when the "time compressed representation" is created. Consistent with the ordinary meaning of "associated," this transmission time is joined or united with the "time compressed representation" in that it is part of or determinable from the data itself and indicates how long the "time compressed" data takes to transmit. As the claim language requires, the "time compressed" data must have only a single such "associated time period."

C. **Means Plus Function Claim Elements**

All the claims in the '995 patent and all the apparatus claims in the '705 patent are written in "means plus function" format and thus must be construed as required by Section 112, ¶ 6. Although they may appear to read broadly because they recite only "means" for performing a function, "Section 112, paragraph 6, rules out the possibility that any and every means which performs the function specified in the claim literally satisfies that limitation." *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 934 (Fed. Cir. 1987), *overruled on other grounds*, *Cardinal Chem. Co. v. Morton Intern., Inc.*, 485 U.S. 1009 (1993). Section 112, ¶ 6 limits these claims to the structure described in the patents-in-suit and its equivalent. *See Medtronic Inc. v. Advanced Cardiovascular Sys., Inc.*, 238

F.3d 1303, 1311-13 (Fed. Cir. 2001). To prove infringement, Burst then bears the burden of proving that Microsoft's accused software uses the same structure as disclosed in the specification or its equivalent. *See Apex, Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364, 1372 (Fed. Cir. 2003).

All Burst's means plus function claim elements use the term "means." "Use of the term 'means' in a claim limitation creates a presumption that 35 U.S.C. section 112, paragraph 6 has been invoked, but that presumption may be rebutted if the properly construed claim limitation itself recites sufficiently definite structure to perform the claimed function." *Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 1361 (Fed. Cir. 2000). Burst, even though every disputed element uses the term "means" and thus is presumably in means plus function form, denies that any of its claim elements are subject to section 112, ¶ 6.

To overcome this presumption, Burst must prove by a preponderance of the evidence that its means elements recite sufficiently definite structure to perform the claimed function. *Apex*, 325 F.3d at 1372. Finding "sufficiently definite structure to perform the claimed function" requires Burst to prove that "the claim itself recites sufficient structure, material, or acts to perform the claimed function." *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1257 (Fed. Cir. 1999).

Burst has utterly failed to rebut the presumption that its claim elements are written in means plus function form. In fact, with only one exception, Burst's expert never identifies any structure recited in the claims themselves.[14] Instead of finding structure in the claims as the legal standard requires, Burst's expert reads the stated function and offers structure, not present in the claim, that could perform the claimed function. *See e.g.* Stevenson Dep. at 206-07. In fact, Burst's expert readily admits that he includes all structure that could perform the claimed function. *See e.g.*, Stevenson Dep. at 210. Burst is thus left with no evidence to rebut the presumption, much less a preponderance of the evidence. *See Apex*, 325 F.3d at 1372.

[14] Burst's expert argues that the "analog to digital converter means" refers to a known structure, a analog to digital converter. Ex. E, Stevenson Dep. at 270.

Although Section 112, ¶ 6 limits the scope of these claim elements to the structure disclosed in the specification as performing the claimed function and its equivalents, a means plus function element does not include all structures disclosed in the specification. *See Medical Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1211 (Fed. Cir. 2003); *Telemac Cellular Corp. v. Topp Telecom, Inc.*, 247 F.3d. 1316, 1332 (Fed. Cir. 2001). To be a corresponding structure under Section 112, ¶ 6, the specification must clearly link that structure to the claimed function. Merely disclosing a structure but not clearly stating that it performs the claimed function fails to make that structure corresponding structure under Section 112, ¶ 6, even if that structure could perform the claimed function. *See Medical Instrumentation*, 344 F.3d at 1211-12.

Determining the structure that corresponds to each of Burst's means plus function claim elements is a part of claim construction and thus an issue of law for the Court. *See Kemco,* 208 F.3d at 1360. Moreover, determining the corresponding structure is a necessary predicate to any infringement analysis because without the corresponding structure the claims are indefinite – there is nothing to which to compare Microsoft's accused software. *See Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1376 (Fed. Cir. 2001).

1. "Input Means For Receiving [Uncompressed] Audio/Video Source Information"

The "input means for receiving audio/visual source information" ("uncompressed input means") is written in means plus function format and must be construed to be limited to the structure identified in the specification as performing the claimed function.[15] This element therefore is limited to a video line or camera input line 15, aux digital input port 17, fiber optic input/output port 18, or TV RF tuner input port 16 used with mechanical selector switches 35, 36, and 37 and their equivalent.

This claim element uses the term "means" and thus is presumably in means plus function form. Burst fails to offer a preponderance of evidence to rebut this presumption. Burst offers

[15] This claim element appears in all Burst's apparatus claims except claim 17 of the '995 patent.

no evidence that this claim element identifies any sufficiently definite structure to perform the claimed function. *See* Ex. D, Von Herzen Decl., ¶ 34. Burst's own expert opines only that he could identify structure to perform the claimed function. *See* Ex. E, Stevenson Dep. at 209.

The specification identifies several structures working together to perform the claimed function – receiving uncompressed audio/video data. The structure identified in the specification for receiving uncompressed audio/video data includes the video line or camera input line 15, aux digital input port 17, fiber optic input/output port 18, or TV RF tuner input port 16 combined with selector switches 35, 36, and 37.[16] The selector switches are shown as mechanical switches (activated with a button on the front of the transceiver) that connect or disconnect the various ports to the VCR-ET's internal circuits. *See* Ex. D, Von Herzen Decl., ¶ 34; Figs. 1, 2. The Court should therefore find that the "input means" is in means plus function form and that it is limited to these structures and their equivalents.[17]

2. **"Input Means For Receiving Audio/Video Source Information As A Time Compressed Representation Thereof"**

The "input means for receiving audio/video source information as a time compressed representation thereof" ("compressed input means") is written in means plus function form.[18] The compressed input means does not identify sufficiently definite structure to overcome the presumption that this element is a means plus function element. Burst provides no evidence that the claim identifies structure, offering only its expert's opinion that he could identify structures to perform the claimed function, not that the claim actually identifies those structures. *See* Ex. E, Stevenson Dep. at 207.

The compressed input means recites a function different from the function performed by the uncompressed input means discussed above. This element requires "receiving audio/video source information as a time compressed representation thereof." Unlike the uncompressed input means, this

[16] Burst's expert agrees that the selector switch is part of this means element. *See* Stevenson Dep. at 214-15.

[17] Equivalents under Section 112, ¶ 6 is not an issue for the Court to decide as part of the claim construction process. *Odetics, Inc. v. Storage Tech. Corp.*, 185 F.3d 1259, 1268 (Fed. Cir. 1999).

input means receives time compressed data, not uncompressed source information.[19] Because it performs a different function, this input means, not surprisingly, corresponds to a different structure.

The only structure the specification discloses as receiving time compressed data is the fiber optic port and the mechanical selector switch 37. *See* Ex. D, Von Herzen Decl., ¶¶ 35.[20] The patents never disclose using the other structures corresponding to the uncompressed input means to receive time compressed data. *See id.* This element is therefore limited to a fiber optic port with a mechanical selector switch and their equivalents.

3. **Compression Means**

With only one exception (claim 17 of the '995 patent), all Burst's apparatus claims in both the '995 and '705 patents require a "compression means." The '995 patent issued from Burst's original patent application and the '705 patent issued as a descendent of Burst's continuation in part application. Because the two applications' specifications are different, the structure corresponding to the "compression means" claim element is different in each patent.

a. The '995 patent

Claim 1 of the '995 patent is representative, requiring:

> compression means, coupled to said input means, for compressing said audio/video source information into a time compressed representation thereof having an associated time period that is shorter than a time period associated with a real time representation of said audio/video source information

As described above, this element's use of the term "means" raises a presumption that it is written in means plus function form. Burst fails to rebut this presumption because it offers no evidence that this claim element identifies a sufficiently definite structure for performing the claimed

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[18] This claim element appears in claim 17 of the '995 patent.

[19] The "audio/video source information" in the uncompressed input means must be uncompressed because the next element in the claim time compresses it.

[20] While Burst's expert testified that there are other structures that "someone skilled in the art would know that they could be used for receiving a time compressed representation," he admitted that no such other structures were described as doing so in the patents. *See* Ex. E, Stevenson Dep. at 221, 222. To be corresponding structure, the specification must clearly link the structure to the stated function. *See B. Braun Med. Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997).

function. Indeed, Burst's expert does not opine that this claim element identifies any structure to perform the claimed function; instead he merely lists types of structures that could perform the claimed function. *See* Ex. E, Stevenson Dep. at 225; *see also* Ex. D, Von Herzen Decl., ¶ 36. Because overcoming the presumption requires that the claim element itself identify sufficiently definite structure, the claim term "compression means" is thus written in means plus function form and must be construed as required by Section 112, ¶ 6. *See Micro Chem.*, 194 F.3d at 1257.

Section 112, ¶ 6 requires determining what structure the specification clearly links to the claimed function as performing the claimed function. The "compression means" does not include other structures not clearly linked to the function or those structures Burst's expert asserts that one of skill in the art could add to the specification. *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1223 (Fed. Cir. 2003).

The "compression means" performs the function of compressing the audio/video source information into a time compressed representation and associating the transmission time with that time compressed data. In the '995 patent, the only structure described as performing compression is a hardware compression chip – an AMD 7971.[21] Ex. A, col. 3, lines 23-24; col. 5, lines 4-8; *see* Ex. D, Von Herzen Decl., ¶ 36; Ex. F, Lang Dep. at 48-49. Although the specification discloses another compression algorithm in addition to the one performed by the AMD 7971,[22] it identifies no structure for performing that algorithm. *See* Stevenson Dep. at 227, 236. Structure corresponding to a means element must be identified in the specification. Means elements do not include other, undisclosed structures that could perform a disclosed algorithm. *See Medical Instrumentation & Diagnostics Corp.*, 344 F.3d at 1211.

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[21] The AMD 7971 is a "compression expansion processor" for compressing "two tone" – *i.e.*, black and white – facsimile images. *See* Exhibit W, Data Sheet for AMD 7971. Although AMD also makes microprocessors, this chip is a special purpose integrated circuit that only performs this type of compression.

[22] The specification describes a "compression algorithm [that] can simply record data corresponding to only those pixels which change color from one frame to the next." col. 5, lines 11-13.

The structure corresponding to the "compression means" in the '995 patent is therefore a hardware compression chip, specifically an AMD 7971 compression chip, and its equivalents.

b. '705 patent

When it filed the continuation-in-part application that lead to the '705 patent, Burst removed the citation to the AMD 7971 compression chip from the specification. Removing the sole structure corresponding to the "compression means" leaves no corresponding structure in the specification. *See Medical Instrumentation*, 344 F.3d at 1211 ("if the specification is not clear as to the structure that the patentee intends to correspond to the claimed function, then the patentee . . . is rather attempting to claim in functional terms unbounded by any reference to structure in the specification. Such is impermissible under the statute."). Not surprisingly, removing this structure does not broaden Burst's means elements. *See WMS Gaming Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1348 (Fed. Cir. 1999) ("The district court apparently took this lack of disclosure to indicate that the limitation reads on any means for performing the recited function. However, this construction is at odds with the requirements of 35 U.S.C. § 112."). As part of its claim construction ruling, Microsoft asks the Court to find that the specification of the '705 patent lacks any structure corresponding to the "compression means."

Although Burst removed the structure in the '995 patent specification – the AMD 7971 – that compresses, Burst's '705 patent specification still discloses two compression algorithms, CCITT Group IV and a form of inter-frame compression. Ex. C, col. 5, lines 9-21. The '705 patent specification, however, identifies no structure for performing these algorithms. *See* Ex. E, Stevenson Dep. at 236; Ex. D, Von Herzen Decl., ¶ 39; Ex. F, Lang Dep. 130-31. A structural element corresponding to a means plus function element cannot be an algorithm – a function itself – unconnected from any structure.

Alternatively, Microsoft asks the Court to find that the structure in the '705 patent corresponding to the "compression means" is the "compressor/decompressor 26," a hardware

compression chip. *See* Ex. D, Von Herzen Decl., ¶ 41. To the extent that a "compressor/decompressor" is a structure (which Microsoft disputes), it referred in 1988 to a hardware compression chip. *Id.* The patent is completely silent on software compression so that cannot be corresponding structure. *See Medical Instrumentation*, 344 F.3d at 1211 (corresponding structure must be clearly linked to means).

Moreover, in 1988 when this patent was filed, software compression would not have worked in the claimed system and therefore the corresponding structure must be hardware. *See* Ex. D, Von Herzen Decl., ¶ 37; Ex. I, Luther, *You are there ... and in control*, IEEE Spectrum (September 1988). The '705 patent describes compressing video represented by a 300x300 pixel frame with 21 bits per pixel and 30 frames/second. As described above, the disclosed system had to compress at the same rate as the video data is received because the system lacks any place to store the uncompressed data. Ex. D, Von Herzen Decl., ¶ 36 Software could not have compressed video data at this rate in 1988. *See* Ex. D, Von Herzen Decl., ¶ 37. The corresponding structure would therefore be a hardware compression chip.

4. **Random Access Storage Means**

The "random access storage means" is in means plus function form and is limited to random access memory, such as DRAM or SRAM, and optical memory, such as a CD-ROM. This element appears in every claim in the '995 patent.

The "random access storage means" uses the term "means" and therefore is presumptively written in means plus function form. Burst fails to rebut this presumption because its expert again only provides evidence that he could identify structure performing the claimed function, not that the claim element itself identifies a definite structure. *See* Ex. E, Stevenson Dep. at 251.

Construing this element means plus function form, the parties largely agree. The "random access storage means" corresponds to random access memory, such as DRAM or SRAM, and

optical memory, such as a CD-ROM, and their equivalents. *See* Ex. E, Stevenson Dep. at 252-53; Ex. D, Von Herzen Decl., ¶ 42.

5. **Storage Means**

The apparatus claims of the '705 patent require a "storage means for storing said digital time compressed representation of said audio/video source information." This element uses the term "means" and therefore is presumptively written in a means plus function form.

Burst fails to rebut this presumption because its expert provides no evidence that the claim element itself identifies a definite structure. This element recites a function, not a sufficiently definite structure. Ex. D, Von Herzen Decl., ¶ 43.

In the '705 patent, the claimed storing function is performed by DRAM and SRAM semiconductor memories, optical disc memories, bubble memories, digital paper, and magnetic disks. *See* Ex. D, Von Herzen Decl., ¶ 43. This claim element therefore corresponds to these structures and their equivalents.

6. **Output Means/Transmission Means**

The "output means" and "transmission means" are used in all the apparatus claims of the '995 and '705 patents, respectively. Claim 1 of the '705 patent, for example, requires:

> transmission means, coupled to said storage means, for transmitting said digital time compressed representation of said audio/video source information away from said audio/video transceiver apparatus in said burst transmission time period

Both the "output means" and the "transmission means" are presumptively written in means plus function form. Neither recites sufficiently definite structure to perform the claimed function. *See* Ex. D, Von Herzen Decl., ¶ 44.

Burst's expert fails to provide any evidence to rebut the presumption that both elements are written in means plus function form. Rather than opining that either element recites structure, he instead offers structures that could perform the claimed function. *See* Ex. E, Stevenson Dep. at 256.

Whether an element is in means plus function form does not depend on whether an expert can imagine structures to perform the claimed function. Rather, the claim element must recite definite structure, which these do not. *See* Ex. D, Von Herzen Decl., ¶ 44.

As a means plus function element, these elements correspond to a fiber optic port connected to a fiber optic telephone line in the '995 patent and additionally a microwave transceiver in the '705 patent. *See, e.g.,* Ex. A, claim 31; Ex. C, col 11, lines 26-29. These elements also require a selector switch to allow the fiber optic port to output, rather than input, data. *See* Stevenson Dep. at 257-58. The selector switch disclosed in the patents is a mechanical switch. *See* Ex. D, Von Herzen Decl., ¶ 44. The "output means" and "transmission means" therefore correspond to a fiber optic port, fiber optic line, and mechanical selector switch and their equivalents.

This element does not correspond to a modem and telephone line because the specification of the '995 patent expressly states that such a telephone line cannot carry faster than real time transmissions, which is part of the claimed function. *See* Ex. A, col. 8, lines 50-57; Ex. E, Stevenson Dep. at 259; Ex. D, Von Herzen Decl., ¶ 44. In the '705 patent specification, Burst removed the statement expressly noting that the telephone line cannot carry faster than real time transmissions, but never stated that a telephone line could carry such faster than real time transmissions. Thus, Burst has failed to clearly link a telephone line to the claimed function as required. *See Medical Instrumentation*, 344 F.3d at 1211-12.

7. **Decompression Means**

Claims 22, 25, and 28 of the '995 patent require:

> decompression means, coupled to said random access storage means, for selectively decompressing the time compressed representation of said audio/video source information stored in said random access storage means

The "decompression means" is presumptively written in means plus function form. Burst fails to rebut this presumption because its expert again only provides evidence that he could

identify structure to perform the claimed function, not that the claim element itself identifies a definite structure. *See* Ex. E, Stevenson Dep. at 273; Ex. D, Von Herzen Decl., ¶ 45.

The "decompression means" corresponds to the same structure as the "compression means." *See* Ex. E, Stevenson Dep. at 273; Ex. D, Von Herzen Decl., ¶ 45. The '995 patent describes the same AMD 7971 compression chip as both compressing the and decompressing received source information.

8. **Editing Means**

The "editing means" is also presumptively written in means plus function form.[23] As with Burst's other elements, Burst's expert does not identify structure recited in the claim element, arguing only that he could identify structures to perform the claimed function. *See* Ex. E, Stevenson Dep. at 263-64. Burst has thus failed to rebut the presumption that this element is in means form. *See* Ex. D, Von Herzen Decl, ¶ 46.

The claimed function of the "editing means" is:

> editing the time compressed representation of said audio/video source information stored in said random access storage means and for restoring the edited time compressed representation of said audio/video source information in said random access storage means

In the specification, this function is performed by the Digital Control Unit (DCU) 14. The DCU is a hardware unit containing (1) a controller 33 implemented as a hardware integrated circuit that assists in the editing and storing functions including the communications between the hardware unit and memory; (2) a Central Processor Unit (CPU) 31 to process audio/video data; and (3) a Read Only Memory (ROM) 32 (implemented as a Texas Instruments part TMS47256) that stores the editing program. The "editing means" thus requires all three structures because all three are necessary to perform the claimed functions. Burst's expert appears not to disagree that this structure is disclosed as corresponding to this element. *See* Ex. E, Stevenson Dep. at 264-65.

[23] The editing means appears in claims 2 and 80 of the '995 patent and claims 2 and 9 of the '705 patent.

The editing means cannot be a general purpose microprocessor in a personal computer running software. The specification discloses only using a microprocessor in a special purpose hardware unit, not in a personal computer. *See* Ex. E, Stevenson Dep. at 241. To be corresponding structure, the microprocessor would have to be clearly linked to the editing function. *See Medical Instrumentation*, 344 F.3d at 1211.

The specification discloses storing the editing program in a ROM, a read only memory. *See* Ex. E, Stevenson Dep. at 267. ROMs cannot be changed and therefore the program that performs the editing function cannot be changed. *See* Ex. D, Von Herzen Decl., ¶ 46. The specification never describes storing the program in a RAM, random access memory, or in other type of storage unit. Ex. E, Stevenson Dep. at 267. Software stored in a RAM or on a magnetic disk instead of in the disclosed ROM therefore does not correspond to the "editing means." Although the specification discloses various RAM memories and a magnetic disk, it never "clearly links" them (or links them at all) to the editing function. *See Medtronic*, 248 F.3d at 1311. The editing means is thus limited to a microprocessor in a hardware DCU unit, including a hardware control unit, a microprocessor, and a program stored in a ROM and their equivalents.

9. **Recording Means**

Claims 36 and 40 of the '995 patent require a recording means for "storing the time compressed representation of said audio/video source information stored in said random access storage means onto said removable recording medium." This element is written in means plus function form because it identifies no structure. Burst fails to overcome the presumption that this element is in means plus function form because it offers only its expert's opinion that he could identify structures that could perform the claimed function, not that the claim itself does so. *See* Ex. E, Stevenson Dep. at 276; Ex. D, Von Herzen Decl., ¶ 47.

The structure identified that performs the function of recording means are the internal elements of the audio/video recording unit (AVRU) 11 with media 23, which is a video recorder using

magnetic tape or an optical disc, and mechanical shunt switch 48'. *See* Ex. D, Von Herzen Decl., ¶ 47; Ex. E, Stevenson Dep. at 275-77.

D. **"Substantially Shorter"**

Every claim of the '705 patent requires that the transmission time be not just shorter than the normal playback time but "substantially shorter."[24] Because every word in a claim must be given meaning (*Exxon Chem. Patents*, 64 F.3d at 1557), "substantially shorter" must be construed to mean something different, and narrower, than "shorter." Indeed, the Federal Circuit recently found that "[s]ince the term 'substantially' is capable of multiple interpretations, we turn to the intrinsic evidence to determine which interpretation should be adopted." *Deering Precision Instruments, L.L.C. v. Vector Distribution Sys.*, 347 F.3d 1314, 1323 (Fed. Cir. 2003).

Neither the term "substantially shorter" nor the word "substantially" appears in the specification. With no established technical meaning and no express definition in the specification, "substantially shorter" must be construed in the context of the system disclosed in the patents and discussed in the file history. *See Vitrionics*, 90 F.3d at 1584. The meaning of substantially shorter cannot be divorced from this intrinsic evidence.

In the '705 patent claims, "substantially shorter" refers to magnitude and, consistent with its ordinary English meaning, requires that the transmission time be not just shorter than the viewing time, but shorter by a magnitude properly characterized as "substantially." A jury, however, is not to determine whether any particular difference between transmission time and viewing time is "substantial" or not. *See Sulzer*, 351 F.3d at 1129. The Court alone, in its claim construction, must resolve what "substantial" means. Moreover, a jury cannot be given an instruction as general as "much shorter." Replacing a claim term with its synonym does not necessarily help the jury understand the claim scope. *See Sulzer*, 351 F.3d at 1129 (jury instructions must ensure that "the jury fully

[24] The claims of the '995 and '839 patent require the transmission time be "shorter" rather than "substantially shorter" than the normal play time.

understands . . . what the patentee covered by the claims"). The Court must fashion a construction of this term that allows a jury to assess meaningfully whether the claim encompasses an accused system. Because the issue is one of magnitude, the Court should adopt a construction that provides a measurable relationship between the magnitudes of the two time periods.

In the context of this patent, one of skill in the art would understand the substantially shorter transmission time to be at least two orders of magnitude – *i.e.*, 1% – or less of the viewing time. *See* Ex. D, Von Herzen Decl., ¶ 48. Such a quantitative construction is appropriate to properly instruct the jury about the scope of this claim. *See Epcon Gas Sys. Inc. v. Bauer Compressors, Inc.*, 279 F.3d 1022, 1030 (Fed. Cir. 2002); *Johns Hopkins University v. Cellpro, Inc.*, 152 F.3d 1342, 1355 (Fed. Cir. 1998).

The intrinsic evidence here shows that a "substantially shorter" transmission time must be less than 1% of the playback time. *See Johns Hopkins University v. Cellpro, Inc.*, 152 F.3d 1342, 1355 (Fed. Cir. 1998) ("Table 9, the only disclosed embodiment of the claimed cell suspension, is highly indicative of the scope of the claims.") The patent specification describes time compressing a two hour movie into 250 megabytes and sending that data over a 200 megabytes/second fiber optic link. Calculating the transmission time in this case reveals that it takes 1.25 seconds to transmit the two hour movie. *See* Ex. D, Von Herzen Decl., ¶ 48. 1.25 seconds is considerably less than one percent of a 7200 second, or two hour, film.[25]

Similarly, to obtain its patents, Burst told the Examiner that Mr. Lang's invention could be used to transmit a two hour movie in 5-30 seconds. Exhibit S, March 12, 1990 Amendment "A" at 20 ('995 patent). This time range corresponds to less than 0.5% of the normal play time. Microsoft is not aware of any other intrinsic evidence relating to the amount of time necessary to transmit time compressed data.

[25] 1.25 seconds is about 0.02% of a two hour movie.

Burst's construction of "substantially shorter" does not give "substantially shorter" any meaning different from the "shorter" transmission times claimed in the other patents.[26] Moreover, Burst's expert defines "substantially shorter" without regard to the specification or other intrinsic evidence and in such a manner that the jury (or even Microsoft itself should it decide to design around this patent) could never determine whether Microsoft's software falls within the claim. With no support from the intrinsic evidence, he construes "substantially shorter" to be enough shorter that it would affect the design of the system. *See* Ex. E, Stevenson Dep. at 195-96. Such a construction simply substitutes one vague expression – substantially – with a vague test. Moreover, with such a construction, the jury could never determine infringement because infringement would depend on a comparison to some unknown prior system – unknown even to Burst's expert who could not even remember what a prior implementation would look like. *See* Ex. E, Stevenson Dep. at 198. Such a construction also makes several assumptions about the system that are not required by the claims or specification and that would affect such a system design. Ex. D, Von Herzen Decl., at ¶ 50.

Burst's proposed construction also ignores that "substantially shorter" requires the transmission time be shorter by a large amount and that the "substantially shorter" transmission time must be different from the "shorter" transmission times claimed in the '995 and '839 patents. Indeed, Burst's expert's construction is completely arbitrary and ungrounded and would even count sending a 60 minute video program in 58 minutes as "substantially shorter."[27] *See* Ex. E, Stevenson Dep. at 198.

Put another way, Burst relies on its own failure to use a term with an ordinary meaning and failure to define that term in the intrinsic evidence to avoid giving "substantially shorter" any

[26] Like so many of its elements, Burst failed to provide a proposed construction of this term in its Proposed Claim Construction. Microsoft is thus forced to rely on Burst's expert's report and testimony.

[27] Indeed, Burst's expert testified that to some engineers even a few tens of milliseconds (*i.e.*, 0.010 seconds) shorter could be substantially shorter. *See* Ex. E, Stevenson Dep. at 203.

limiting effect. But all claim terms must have some meaning and therefore some limiting effect. *Exxon Chem. Patents*, 64 F.3d at 1557. [28]

Alternatively, Burst, at best, urges that the meaning of "substantially" is ambiguous. Ambiguous claim elements are to be construed narrowly and against Burst as the drafter. *Athletic Alternatives, Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573, 1581 (Fed. Cir. 1996). "Where there is an equal choice between a broader and a narrower meaning of a claim, and there is an enabling disclosure that indicates that the applicant is at least entitled to a claim having the narrower meaning, we consider the notice function of the claim to be best served by adopting the narrower meaning." *Id.*

The only intrinsic evidence shows that "substantially shorter" means less than one percent of the normal playback time. The Court should therefore construe the "substantially shorter" transmission time to be less than one percent of the normal play time.

E. **"Audio/Video Transceiver"**

All Burst's apparatus claims claim an "audio/video transceiver." A transceiver is a device in which all its components are contained in a common housing. The claim language and the ordinary meaning of "transceiver" dictate the same for Burst's claims.

The very language of Burst's claims require that all the claimed components be in a common housing. Burst claims a "transceiver apparatus" "comprising" certain components. The Patent Office's Manual of Patent Examining Procedure ("MPEP") explains that:

> The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps.

[28] The inventor, Mr. Lang, testified that "substantially shorter" is "subjective." Ex. F, Lang Dep. at 133-138. A claim construction must instruct the jury what is within the claims and what is outside of them and cannot be "subjective." *See Sulzer*, 351 F.3d 1129.

Ex. T, MPEP, Section 2111.03 Transitional Phrases. Although "comprising" allows additional elements to be added, the claimed "transceiver apparatus" must have all of the claimed components. The claimed components cannot be, as Burst's expert argues, part of separate apparatuses.

The claims reflect this definition. For example, claim 1 of the '995 patent requires:

> 1. An audio/video transceiver apparatus **comprising**:
>
> [a] input means for receiving audio/visual source information;
>
> [b] compression means, coupled to said input means, for compressing said audio/video source information into a time compressed representation thereof having an associated time period that is shorter than a time period associated with a real time representation of said audio/video source information;
>
> [c] random access storage means, coupled to said compression means, for storing the time compressed representation of said audio/video source information; and
>
> [d] output means, coupled to said random access storage means, for receiving the time compressed audio/video source information stored in said random access storage means for transmission away from said audio/video transceiver apparatus

On its face, this claim requires a "audio/video transceiver apparatus comprising" several component parts: (a) input means, (b) compression means, (c) random access storage means, and (d) output means. All four components are part of the same "transceiver apparatus" and thus must be within the same housing.[29]

Further, the ordinary meaning of the term "transceiver" refers to components in a common housing. *See Texas Digital*, 308 F.3d at 1203; Ex. D, Von Herzen Decl., ¶ 51. The Authoritative Dictionary of IEEE Standards Terms defines "transceiver" as:

> transceiver(1) (data transmission) **the combination of radio transmitting and receiving equipment in a common housing**, usually

[29] All of the claimed components also were known prior to the Burst patent; it is the combination of these elements as set forth in the claim that imparts the supposed inventive nature for the claim. It would stand patent law on its head if Burst were allowed now to read its combination claims on an unassembled aggregation of the components it patented in a specific combination. *See generally Karsten Mfg*, 242 F.3d at 1385 (discussing the irrelevance of all components having been disclosed in prior art).

> for portable or mobile use, and employing common circuit components for both transmitting and receiving. (PE) 599-1985w

Exhibit T, Authoritative Dictionary of IEEE Standards Terms, 7th Edition, IEEE Press (2000) (emphasis added).[30] Burst's expert argues that this definition reflects usage in radio transmission but never explains why the definition here should be any different. *See* Ex. E, Stevenson Dep. at 185. Burst's patents, nonetheless, expressly disclose a radio transceiver using microwaves and thus provide a link to radio technology.

The specification also supports Microsoft's construction. The specification describes the disclosed system:

> FIGS. 1 and 2 illustrate an improved audio/video recorder editor/transceiver 10 (VCR-ET) comprising an audio/video recording unit (AVRU) 11, a video control unit (VCU) 12, memory 13, digital control unit (DCU) 14, video line or camera input line 15, TV RF tuner 16, auxiliary digital input port 17, fiber optic input/output port 18, RF modulator 19, RGB converter with synchronizer 21, and an audio/video transmitter/receiver 22 with keypad 45, **all in a common housing.**

Ex. C, col. 3, lines 38-47.

Burst's expert claims support for Burst's construction in the specification, but to do so, ignores the specification's careful use of the term "transceiver." *See* Ex. E, Stevenson Dep. at 185. According to Burst's expert, the claimed "audio/video transceiver" does not require all components to be in the same housing because the specification discloses an alternate embodiment using a separate VCR. Ex. C, '705 patent, col. 10, lines 52-66; Ex. E, Stevenson Dep. at 185. Although the specification uses the term "transceiver" to describe the primary disclosed embodiment – *i.e.*, a transceiver with components "all in a common housing" (col. 3, line 47) – the specification does not use the term "transceiver" to describe the alternate embodiment with some components outside the common housing to which Burst's expert refers. *See* col. 10, lines 52-66. There is no reason to construe Burst's claims to cover all disclosed embodiments, especially when the claims use language

that excludes one of the disclosed embodiments. *See Johnson & Johnston*, 285 F.3d at 1052. The specification thus clearly supports Microsoft's construction.

F. Two Of Burst's Claims Require Receiving Time Compressed Data And Re-Transmitting It In Same Amount Of Time

Two of Burst's asserted claims, claim 17 of the '839 patent and claim 21 of the '705 patent, also require that the claimed transceiver receive and transmit the "time compressed representation" of the audio/video information in the same amount of time.

Looking to claim 21 as an example, in addition to a "burst transmission time period" "substantially shorter" than the play time, claim 21 requires both receiving and re-transmitting the time compressed data in the same amount of time called a "burst transmission time period":

> **receiving** audio/video source information as a digital time compressed representation thereof ... **said at least one video program being received by a receiver in a burst transmission time period** that is substantially shorter than a time period associated with real-time viewing by a receiver of said at least one video program
>
> * * *
>
> **transmitting, in said burst transmission time period**, the stored digital time compressed representation of said audio/video source information to a selected destination

Under black-letter claim construction principles and simple logic, the term "said burst transmission time period" refers back to the "burst transmission time period" recited earlier in the claim as being the time period in which the "at least one video program [was] received." *See Combined Sys., Inc. v. Defense Tech. Corp. of America*, 350 F.3d 1207, 1211-12 (Fed. Cir. 2003) (use of phrase "said folds" "plainly, as a matter of grammar" forcloses construction whereby "said" does not refer back to previously formed folds). Because both terms refer to the same time period, both the "receiving" step and the "transmitting" step must occur in the same amount of time. For example, this claim covers receiving a program in 10 seconds, storing it, and later also transmitting it in 10 seconds

[30] Note that even though this definition comes from a 2000 dictionary, the dictionary identifies the definition as from 1985.

(even if that data represents more than 10 seconds worth of play time at normal speed). The language clearly excludes, however, receiving a program in 10 seconds but retransmitting it in some other amount of time, such as 20 seconds or in 5 seconds.

G. The Claims Require Processing The Entire "Audio/Video Source Information" At A Time

The use of the "audio/video source information" in Burst's claims requires that the claim be construed to cover only processing an entire audio/video program at a time. Burst's claims do not reach a system that processes audio/video data in parts.

Burst's claims require processing the entire "audio/video source information" in a step-by-step fashion. For example, claim 1 of the '839 patent requires:

> receiving audio/video source information;
>
> compressing the received audio/video source information into a time compressed representation thereof having an associated burst time period that is shorter than a time period associated with a real time representation of the received audio/video source information;
>
> storing said time compressed representation of the received audio/video source information; and
>
> transmitting, in said burst time period, the stored time compressed representation of the received audio/video source information to a selected destination

Ex. B, col. 13, lines 1-15. The claim language requires: (1) receiving the entire program – *i.e.*, the "audio/video source information," (2) then time compressing that information into a "time compressed representation thereof," (3) then storing that "time compressed representation," and (4) finally transmitting the "stored time compressed representation." These steps must be performed sequentially because each step uses the result of the previous step as a precursor. *See Oak Tech., Inc. v. ITC*, 248 F.3d 1316, 1325 (Fed. Cir. 2001). Thus, this claim requires processing the "audio/video source information" as a whole – each step must be performed before the next step is performed. The

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See Ex. U, "How to Use This Dictionary" p. vi.

requirement that the "audio/video source information" be processed as a whole comes directly from the claims.

Paragraph redacted due to reference to Exhibit O

Exhibit O was withdrawn at Burst.com's request as inadvertently produced privileged document.

Although it is the only technique claimed, processing the audio/video source information as a whole is not the only way to process audio/video data. It does, however, represent a processing technique useful with certain types of compression. Although Burst's expert claimed in his Expert Report that processing a "whole" program "makes no technical sense," he acknowledged the opposite in his deposition, admitting that it was technologically possible to process the data as a whole and that in certain circumstances, it is advantageous to do so. *See* Ex. E, Stevenson Dep. at 35-36; Ex. D, Von Herzen Decl., ¶ 54.

As properly construed, Burst's claims require receiving the entire program before starting to time compress it, time compressing the entire program before storing it, and storing the entire program before transmitting it. Burst's claims do not, however, cover processing some parts of a program in one step while other parts of that same program have moved on to the next step. Burst's proposed construction simply ignores the language of its own claims.

H. "Multiplicity Of Video Frames Collectively Representing At Least One Motion Video Program"

All the claims in the '705 patent require "a multiplicity of video frames collectively representing at least one full motion video program." This limitation requires an entire video program

with video frames and corresponding audio. The claim language and specification show that this means that the entire audio/video file must be processed as a whole, not in parts.

Burst, however, defines the claim term "a multiplicity of video frames collectively representing at least one full motion video program" to mean "a multiplicity of video and or audio frames collectively representing a continuous arrangement of a multiplicity of audio and or video information for performance, storage, broadcast and or transmission." Ex. J, Burst's Proposed Construction at 18. Burst plainly seeks to cover processing less than an entire video program – *e.g.*, processing a few frames at a time.

The proper construction of these claims requires considering the claim language as a whole. When taken in context, the "full motion video program" language clearly requires an entire video program. Claim 1 of the '705 patent, for example, requires "said audio/video source information comprising a multiplicity of video frames collectively representing at least one full motion video program." Ex. C, col. 12, lines 39-41. The words "collectively representing at least one" would have no meaning if the claimed "video program" did not need to be an entire program. Directly contrary to the claim language, Burst proposes reading "representing at least one ... video program" to include less than one program – *i.e.*, only part of a program.

Burst mistakenly argues that the specification supports its construction. The specification expressly defines program as Microsoft urges here: "As used in the remainder of this specification, the term 'program' encompasses movies and other types of video and/or audio materials, whether broadcast from a TV station or another source." Ex. C, '705 patent, col. 1, lines 23-26. Thus, a program is an entire movie or other type of video and/or audio material.

I. Editing the Time Compressed Representation

Several dependent claims in all three patents-in-suit require editing the time compressed representation and storing the edited time compressed representation.[31] Editing should be construed to have its plain meaning – changing the content of the thing being edited. In the context of these claims, that means using the "time compressed representation of said audio/video source information" as the original data and changing the sequence or appearance of that information or adding or subtracting information to create the "edited time compressed representation of said audio/video source information." The "editing" function is performed on the "time compressed representation of said audio/video source information." Editing is not compiling or using a list or compilation of audio/video programs.

Microsoft's Windows Media Server software is able to transmit a preset selection of audio or video content based on a playlist. A playlist is the content list that causes Windows Media Server to transmit the content without user intervention. Burst accuses this feature of infringing its editing claims.

The specification describes editing as:

> In addition, a program may be edited, one frame at a time, by changing the contrast, brightness, sharpness, colors, etc. (Alteration of the contrast, brightness, sharpness and colors can be automated as well.) In one embodiment, images can be rotated, scaled (i.e., made larger or smaller), etc. In addition, pixel by pixel editing can be accomplished by DCU 14, e.g., in a manner similar to a PC paint program. ... The user can delete frames in a strip, select a point where other frames are to be inserted into the program, or edit different frames (i.e., alter contrast, brightness, sharpness, colors, etc.).

Ex. C, '705 patent, col. 6, lines 40-57. The specification thereby describes editing as modifying a program and the images comprising it. The specification never describes transmitting programs from a list as editing.

[31] The claims requiring "editing" are claims 2 and 80 of the '995 patent, claim 2 of the '839 patent, and claims 2, 9, and 13 of the '705 patent.

Specifically, "editing" is not the same as creating a playlist or using a playlist to send content. A playlist identifies certain audio or video files to be played and their sequence. A playlist does not contain the material itself but simply identifies material to be played and its play order. The video material identified on the playlist never exists together as a whole, which is required both by the definition of editing and by the claim language, which requires storing an "edited time compressed representation." The playlist just causes the software to play audio or video files in a particular order and thus is not editing.

An example shows why a playlist is not editing to one of skill in the art. A radio station plays songs and ads in a particular order from a playlist. By selecting the songs and their order, the radio station is not editing either the songs or the ads or the resulting broadcast. *See* Ex. D, Von Herzen Decl., ¶ 53.

Thus, the Court should find that "editing" means using the "time compressed representation of said audio/video source information" as the original data and changing the sequence or appearance of that information or adding or subtracting information to create the "edited time compressed representation of said audio/video source information." Editing is not compiling a list or compilation of audio/video programming. *See* Ex. D, Von Herzen Decl. ¶ 52.

J. Certain of Burst's Claims Require The Entire End-To-End Communication Link Be The Claimed Type of Link

Certain of Burst's dependent claims require transmitting time compressed audio/video data over a fiber optic line or telephone line (depending on the claim) end-to-end from sender to receiver.[32] These claims do not reach a connection using a fiber optic or telephone line for only part of the communications link.

For example, claim 4 of the '839 patent requires, from its parent, claim 1, "transmitting, in said burst time period, the stored time compressed representation of the received audio/video source

information to a selected destination." Dependent claim 4 then further limits Burst's patent coverage by specifying that this transmission to a selected destination must occur over an optical channel.[33] For example, claim 4 requires "wherein the step of transmitting comprises transmitting said time compressed representation of said audio-video source information over an optical channel."

This claim language precludes coverage of any connection where just some portion of the total length has the required characteristic, such as being "an optical channel." This claim language requires "transmitting" "to a selected destination" "over an optical channel." Thus, consistent with the patent specification, the claim language requires the entire transmission between the sender and the "selected destination" to be "over" the optical or telephone channel. *See e.g.*, Ex. A, '995 patent, col. 7, line 55 – col. 8, line 2.

Other accused claims similarly require an end-to-end fiber optic connection. For example, claim 30 of the '995 patent requires "one of said one or more communications links comprises a fiber optic transmission line coupled between said fiber optic input port and said fiber optic output port." Claim 7 of the '705 patent is similar, requiring "at least one communication link includes a fiber optic transmission line coupling in communication said fiber optic input port with said fiber optic output port." The very language of these claims requires the fiber optic transmission line to connect the input and output ports from end-to-end. Similarly, according to claim 18 of the '995 patent, "said input means comprises a fiber optic input port; [and] said input means is coupled, via a fiber optic transmission line, to a video library."

The remaining claims listed above similarly require transmission over an end-to-end fiber optic or telephone line. A connection that uses a fiber optic line, or telephone line, with another communication link does not fall within these claims.

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[32] These claims are claims 4, 5, 18, 31 of the '995 patent, claims 4, 5, 18, 31, 32 of the '839 patent, and claims 7, 16, 17, 19, 20, 23, 24 of the '705 patent.

[33] Dependent claims contain all of the limitations of their parent claim as well as any limitations in the dependent claim itself. *See Wahepton Canvas Co. v. Frontier, Inc.*, 870 F.2d 1546, FN.9 (Fed. Cir. 1989).

CONCLUSION

Microsoft requests that the Court construe the disputed claim terms consistent with the terms' ordinary meaning and the intrinsic evidence. Microsoft also requests that the Court construe the disputed claim terms in sufficient detail that the jury can understand what Burst's claims cover and what they do not.

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CERTIFICATE OF SERVICE

Bryan K. Anderson, an attorney, hereby certifies that on January 12, 2004, he caused a true and correct copy of the foregoing document, Microsoft Corp.'s Opening Claim Construction Brief, to be served by Federal Express overnight delivery upon counsel of record as follows:

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